CLAIMS

1. A method of producing a graded refractive index optical element comprising applying a paste containing a copper compound, an organic resin and an organic solvent to a glass substrate containing an alkali metal component as a glass component and then performing heat treatment at a temperature below the softening temperature of the glass substrate.

2. The method according to claim 1 wherein the graded refractive index optical element is a lens, lens array or diffraction grating.

3. The method according to claim 1 wherein the glass substrate is made of a glass containing at least 2% by weight of alkali metal, calculated on an oxide basis, the glass being a silicate glass, borosilicate glass, phosphate glass, or fluorophosphate glass.

4. The method according to claim 3 wherein the glass substrate is a borosilicate glass substrate containing 40 to 82% by weight of SiO_2, 12 to 50% by weight of B_2O_3, 2 to 25% by weight of at least one member selected from Na_2O, K_2O, Li_2O, Rb_2O and Cs_2O; not more than 25% by weight of at least one member selected from MgO, CaO, BaO, ZnO, SrO and PbO; not more than 20% by weight of at least one member selected from Al_2O_3, La_2O_3, Y_2O_3, Ta_2O_3 and Gd_2O_3; not more than 10% by weight of at least one member selected from Nb_2O_5 and ZrO_2; not more than 5% by weight of at least one member selected from As_2O_3, Sb_2O_3 and SnO; and 0.05 to 10% by weight of at least one member selected from Cl, Br and I.

5. A graded refractive index optical element produced by the method of any one of claims 1 to 4.

6. The graded refractive index optical element according to claim 5 which is a lens, lens array or diffraction grating.